REMARKS

Claims 1 to 9 were pending in the present application. Applicant has amended claims 1, 4, and 5, canceled claims 7 to 9, and added claims 10 to 13. Amendments to claim 1 is supported by the Specification, p. 11, lines 6 to 15. Amendments to claims 4 and 5 are supported by the Specification, p. 19, line 26 to p. 20, line 7. New claims 10 and 11 are supported by the Specification, p. 12, line 12 to p. 13, line 14. New claims 12 and 13 are supported by the Specification, p. 13, lines 15 to 24, p. 28, line 4 to p. 29, line 22.

Response Period

The Examiner provided a shortened period for reply of one (1) month from the mailing of the Office Action instead of the usual three (3) month reply period. When contacted by the Applicant's attorney, the Examiner stated that he made a mistake and he will mail a new Office Action to reset the reply period. When contacted again by the Applicant's attorney after the new Office Action did not arrive, the Examiner stated that he had sent out the new Office Action although he could not locate it in the computer system at the Patent Office. At that point, the Examiner advised Applicant's attorney that it would be best to respond to the original Office Action and request a refund for any extension fee paid to the Patent Office. Applicant appreciates any assistance the Examiner can provide in this regard.

Election/Restriction

Applicant affirms the election of the invention of Group I, claims 1 to 6 without traverse. Accordingly, Applicant has canceled claims 7 to 9.

Claim Objection

The Examiner objected to claim 4 for reciting a link watchdog communication that is identical to a built in self test (BIST) communication. Applicant has amended claim 4 to distinguish the link watchdog communication from the BIST communication.

§ 103(a) Rejections

Claims 1, 2, and 3

The Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,049,889 ("Steely, Jr. et al.") in view of U.S. Patent No. 5,850,556 ("Grivna"). Specifically, the Examiner cited col. 7, lines 26 to 32 of Steely, Jr. et al. for disclosing "a direct memory access (DMA) command for writing a block of data from a local node to a remote node via the communication link" as recited in claim 1. March 11, 2005 Office Action, p. 3. The Examiner then cited col. 6, lines 46 and 47 and col. 7, lines 13 to 15 of Steely, Jr. et al. for disclosing "a memory copy write command for writing a line of memory from a local node to a remote node via the communication link when any data is written into that line of memory" as recited in claim 1. March 11, 2005 Office Action, p. 3. Applicant respectfully traverses.

The Examiner has cited a single element in Steely, Jr. et al. against two distinct elements recited in claim 1. Specifically, the Examiner has cited the reflected write in Steely, Jr. et al. against both (1) the DMA write and (2) the copy memory write recited in claim 1. Steely, Jr. et al., col. 6, lines 46 and 47 states, "FIG. 7A, a second embodiment of the Reflective Memory design is shown." The complete paragraph that includes col. 7, lines 13 to 15 and 26 to 32 of Steely, Jr. et al. states,

> Referring again briefly to FIG. 5, a reflected write between nodes in the network of FIG. 7A progresses through most of the steps of FIG. 5, with the following exceptions. After step 62, when the write is transformed to a 32 byte write, it is transmitted over local bus 78. There is no conversion done by the I/O unit on the CPU write address, so step 64 is not performed. Rather, at step 66 the MC adaptor 80 compares the write seen over the local bus 78 to see if the address falls within the range of the MC address space. If it doesn't, there is no action on the behalf of the MC adaptor. If the address does fall within the MC address space, at step 68, the Transmit control table 102 is indexed and the corresponding network address is provided into the transmit fifo 103 for eventual propagation onto data link 84. The node receiving the write command performs the same step as that of step 70, however, it converts the network address to the local write address. A Direct Memory Access (DMA) operation is then performed at step 72 from the MC adaptor into local memory or the I/O device (rather than from the I/O interface, as described with reference to FIG. 1).

Steely, Jr. et al., col. 7, lines 13 to 33 (emphasis added). As can be seen, the lines cited against (1) the DMA write command and (2) the memory copy write command all describe the operation of a reflected write. The reflected write of Steely, Jr. et al. cannot be both (1) the DMA write command and (2) the memory copy write command recited in claim 1.

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Specifically, the reflected write of Steely, Jr. et al. is not the DMA write command recited in claim 1. The lines of Steely, Jr. et al. cited by the Examiner against the DMA write command (col. 7, lines 26 to 32 of Steely, Jr.) disclose a DMA operation at a local node for transferring data from a memory channel adaptor 80 to a local memory 77 or an I/O device 82 as shown in Fig. 7A. These lines do not disclose "a direct memory access (DMA) write command for writing a block of data from a local node to a remote node via one of the communication links" as cited in claim 1. Likewise, Grivna does not disclose such a DMA write command.

For the above reasons, claim 1 is patentable over the combination of Steely, Jr. et al. and Grivna as they do not disclose both the DMA write command and the memory copy write command recited in claim 1.

The Examiner rejected claims 2 and 3 under 35 U.S.C. § 103(a) as being obvious over Steely, Jr. et al. in view of Grivna. Claims 2 and 3 depend from claim 1 and are patentable over the combination of Steely, Jr. et al. and Grivna for at least the same reasons as claim 1.

Claims 4, 5, and 6

The Examiner rejected claims 4 and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,850,556 ("Cromer et al.") in view of U.S. Patent No. 6,163,805 ("Silva et al.").

Applicant has amended claim 4 to additionally recite "a response to the link watchdog communication that piggybacks in each acknowledgement packet issued by the remote node as long as the software at the remote node functions properly," which is not disclosed by the combination of Cromer et al. and Silva et al. Amended claim 4. Accordingly, amended claim 4 is patentable over Cromer et al. and Silva et al.

Claim 6 depends from claim 4 and is therefore patentable over the cited references for at least the same reasons as claim 4.

The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Cromer et al. in view of Silva et al. and further in view of U.S. Patent No. 6,367,042 ("Phan et al."). Claim 5 depends from claim 4 and is therefore patentable over the cited references for at least the same reasons as claim 4.

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New claims 10 to 13

New claims 10 to 13 depend from claim 1 and are patentable over the cited references for at least the same reasons as claim 1.

Claim 11 is further patentable for reciting a DMA write command for "computing parity over multiple blocks of data from a local memory of the local node and writing the parity to a remote memory of the remote node," which is not disclosed by the cited references.

Claim 12 is further patentable for reciting a memory copy write command for "reading existing data from the line of memory in a local memory of the local node, merging new data with the existing data, and writing merged data to a corresponding line of memory in a remote memory of the remote node," which is not disclosed by the cited references.

Claim 13 is further patentable for reciting a memory copy write command "devoid of any address mapping," which is not disclosed by the cited references. Specifically, Steely, Jr. et al. discloses the use of address translations from the local memory address of a local node to a network memory address, and then from the network memory address to the remote memory address of a remote node. See Steely, Jr. et al., col. 4, lines 4 to 29.

For the above reasons, new claims 10 to 13 are patentable over the cited references.

In summary, claims 1 to 9 were pending in the present application. Applicant has amended claims 1, 4, and 5, canceled claims 7 to 9, and added claims 10 to 13. Applicant requests the allowance of claims 1 to 6 and 10 to 13. Should the Examiner have any questions, please call the undersigned at (408) 382-0480x206.

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Respectfully submitted,

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